

ERIOGONUM LIBERTINI (POLYGONACEAE),
A NEW SPECIES FROM NORTHERN CALIFORNIA

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ABSTRACT

Eriogonum libertini is a new species of the subgenus *Oligogonum* known only from serpentine outcrops in the California Coast Ranges of Shasta, Tehama and Trinity Counties. It is most closely related to *E. ternatum* Howell, a serpentine species of northernmost California and adjacent Oregon, differing in having a whorl of three foliaceous bracts at midlength along the stem and an inflorescence reduced to a single terminal involucre.

***Eriogonum libertini* Reveal, sp. nov.**

A *E. ternatum* Howell foliis brevioribus et semper tomentosis insuper, bracteis 3, foliaceis, inflorescentiis solitariis, floribus majoris (5–8 mm longis nec 3–5 mm longis) cum stipibus longior (1–1.5 mm nec 0.3–0.6 mm longis) differt (Fig. 1).

Low, spreading herbaceous perennial forming a rather dense mat to 4 dm across, with a densely branched, spreading, woody caudex arising from a stoutish, well-defined, woody taproot; leaves in small, well-defined, densely congested rosettes at tips of exposed caudex branches, the leaf-blades numerous, oblong to elliptic or rarely rounded, 0.5–1(–1.5) mm long, 3–5(–7) mm wide, densely white-tomentose below, thinly tomentose and greenish above even at maturity, often drying blackish in age, the apices acute to obtuse, the bases obtuse, with plane, entire margins, on slender petioles 2–6 mm long, thinly tomentose throughout or at least near the leaf-base, otherwise ciliate marginally, the petiole-bases narrowly triangular, 0.5–3 mm long, 0.4–1 mm wide, glabrous or nearly so on both surfaces; flowering stems erect, slender, 5–15 cm long, thinly floccose, with a whorl of three foliaceous bracts about midlength; inflorescences capitate and terminal, 1–1.5 cm across; bracts lacking below involucre, restricted to middle of stem, these narrowly lanceolate to narrowly elliptic, 5–7(–10) mm long, 0.8–2.5 mm wide, tomentose on both surfaces although less so above, greenish-white to white; peduncles (that portion of stem between bracts and involucre) erect, slender, 2–4.5 cm long, thinly floccose; involucre solitary, turbinate-campanulate to campanulate, the involucral tube 4–8 mm long, 5–6(–8) mm wide, densely tomentose without, glabrous within, with 5–8 erect to slightly spreading triangular teeth 0.5–1(–1.5) mm long, the bractlets linear, 4.5–9 mm long, hirsutulous

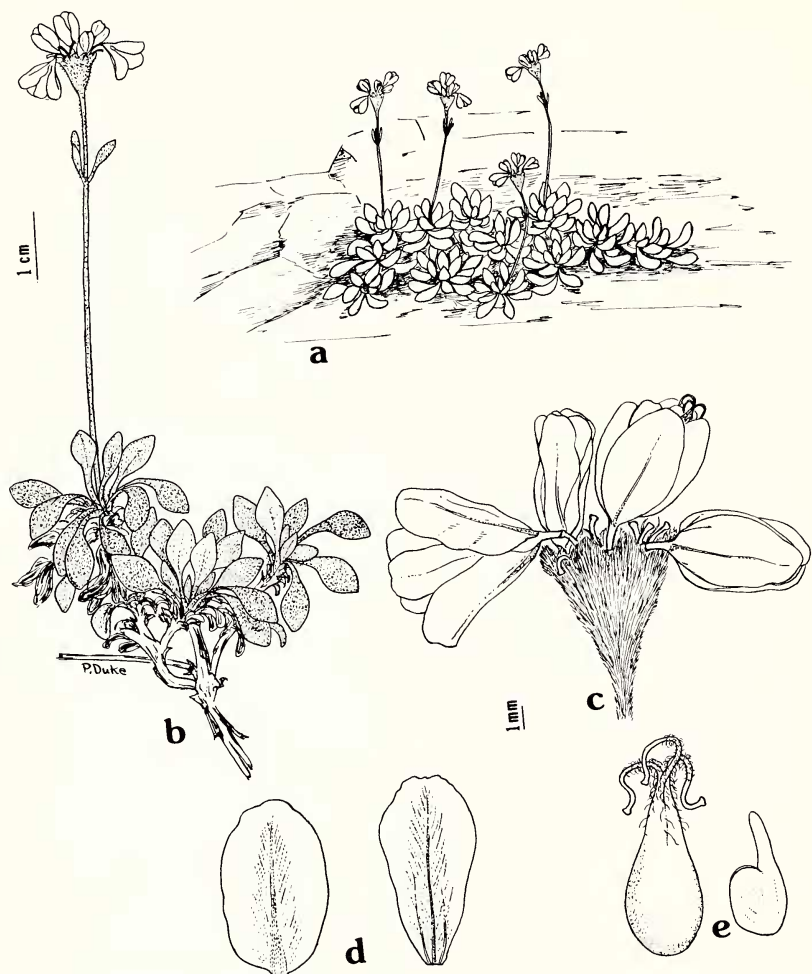


FIG. 1. *Eriogonum libertini* Reveal. a. Habit. b. Detail of leaves and flowering stem. c. Detail of involucre and flowers. d. Outer (left) and inner (right) tepals. e. Achene (left) and embryo (right).

with long, thin cells, the pedicels 4–8 mm long, glabrous; flowers stipitate, sulphur-yellow with a blackish-green midrib, 5–8 mm long including the 1–1.5 mm long stipe, glabrous except for minute glands along midribs of outer tepals and over most of inner surface of inner tepals, the tepals dimorphic, spatulate to oblong with obtuse apices, connate about $\frac{1}{4}$ of flower length above stipe; stamens slightly exerted to more commonly included, 4–6 mm long, with basally densely pilose fila-

ments and yellowish anthers 0.6–0.8 mm long; style 1.5–2 mm long; achenes light brown, 4–6 mm long, the narrowly globose base tapering gradually to a slightly pubescent, faintly 3-angled beak; embryo curved.

TYPE: USA, CA, Tehama Co., along Tedoc Rd. 18.4 km s. of Hwy 36 (Beegum Rd.) and 1.4 km n. of Tedoc Gap, on a w.-facing serpentine slope in reddish soil associated with pine, oak, and manzanita, 1400 m, 19 Jul 1978, *Reveal 4788* (Holotype: US; isotypes: BRY, CAS, GH, K, MARY, MICH, MO, NY, TEX, UC, UTC).

PARATYPES: USA, CA, Shasta Co.: 1.6 km from Regan Meadow along rd. to Brushy Mt., T28N R11W S1, 27 Jul 1979, *Nelson et al. 5046* (CAS, HSC, MARY, US); Tehama Co.: nw. side of Mt. Tedoc, 1300 m, 17 Jun 1972, *Heckard 2965* (JEPS); near Tedoc Gap, 21 Jul 1949, *Hoffman 3051* (UC); 2.3 km e. of Red Mt. Guard Station on White Rock Rd., 6 Jul 1950, *Hoffman 3693* (UC); rd. from Tedoc Gap to Mt. Tedoc, T28N R9W S28, 1500 m, 25 Jun 1979, *Nelson and Nelson 4888* (MARY); Trinity Co.: 4.3 km nw. of Red Mt., 17 Jul 1949, *Hoffman 3046* (CAS, UC); rd. to Hell-to-Find Lake, T29N R11W S27, 23 Jun 1978, *Nelson and Nelson 4361* (MARY); along Salt Creek Rd. at USFS Rd. 30N24, T30N R11W S33, 950 m, 17 Jun 1980, *Nelson and Nelson 5496* (MARY); 6.4 km (4 mi.) n. of Indian Valley Guard Station, T2N R7E S10, 1340 m, 18 Jun 1980, *Nelson and Nelson 5554* (MARY); 0.8 km (0.5 mi.) s. of Salt Creek Bridge along Hwy 36, T30N R12W S13, 760 m, 19 Jun 1980, *Nelson and Nelson 5626* (MARY); Rattlesnake Ridge, T29N R12W S20, 1220 m, 19 Jun 1980, *Nelson and Nelson 5647* (MARY); Blue Point, T30N R12W S35, 1370 m, *Nelson and Nelson 5690* (MARY); along USFS Rd. 29N28, 11.2 km (7 mi.) s. of Hwy 36, T29N R11W S26, 1370 m, 22 Jun 1980, *Nelson and Nelson 5743* (MARY); Red Mt., T26N R12W S20, 1250 m, 9 Jun 1979, *Nelson and Sawyer 4116* (MARY); rd. from Hayfork Cr. to Hell-to-Find Lake, 1530 m, 30 Jun 1973, *Sawyer 2531* (HSC); sw. of South Dubakella Mt. 1590 m, 3 Jul 1973, *Smith 6991* (HSC); along USFS rd. 30N38 from Hwy 36 to Cold Springs Guard Station, 760 m, 22 Jun 1975, *Smith and Sawyer 8245* (HSC); Blue Point on Blue Point Ridge, T30N R12W S35, 1400 m, 25 Jun 1979, *Smith et al. 10206* (MARY).

The epithet honors Freedom William Hoffman (1880–1959), an amateur botanist interested in plants of serpentine areas in northern California, especially *Streptanthus* (Morrison, 1960).

Eriogonum libertini (from the Latin *libertinus* = of a freedman) is a local, serpentine endemic mostly restricted to outcrops supporting Jeffrey pine. It forms large mats with occasional rosettes bearing erect flowering stems each with a whorl of three foliaceous bracts about midlength, terminated by a solitary involucre containing numerous, large, glabrous, sulphur-yellow flowers. Outwardly the new species is most similar to *E. ternatum* Howell, which differs in having a

branched, open inflorescence without a whorl of bracts midlength along the flowering stem. Because of the position of the whorled bracts, the new species resembles *E. siskiyouense* Greene, a serpentine endemic restricted to Scott Mountain, Mount Eddy, and associated mountain peaks along the Siskiyou and Trinity County line. It may be distinguished from *E. siskiyouense* by the short, erect to spreading teeth of the involucre, which are not reflexed nor longer than the tube. *Eriogonum ternatum* is more widespread than either *E. libertini* or *E. siskiyouense*, and is found mainly in Del Norte and Siskiyou Counties, California, and in adjacent Josephine County, Oregon. I have seen a recent collection of *E. ternatum* from Trinity County (Nelson *et al.* 5062, CAS, HSC, MARY, NY, US). However, the ranges of *E. ternatum* and *E. libertini* do not overlap.

Eriogonum libertini was indirectly indicated by Lambertson (1980) as a potential candidate for federal listing as an endangered or threatened species. Thanks to the efforts of Thomas W. Nelson who has expanded significantly the known range of the species during his 1980 field work, the plant cannot justifiably be considered for protection.

ACKNOWLEDGMENTS

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